

ABSTRACT OF THE DISCLOSURE

A method for treating circadian rhythm disorders is described. The method involves the administration of melatonin, melatonin agonists or compounds that stimulate endogenous melatonin production so that the durations of the effective plasma concentrations of melatonin, melatonin agonists or compounds that stimulate endogenous melatonin production overlap with onset or offset of pre-treatment endogenous melatonin production, to provide a circadian-rhythm phase advance or phase delay, respectively. The methods of the invention also provide for concentration and/or duration of the effective plasma concentrations of melatonin, melatonin agonists or compounds that stimulate endogenous melatonin production to be greater in the time interval between about 8 hours before the dim light endogenous melatonin onset (DLMO) to about 4 hours after DLMO than in the time interval from about 4 hours after DLMO to about 8 hours before DLMO to achieve a circadian-rhythm phase advance. The methods of the invention also provide for concentration and/or duration of the effective plasma concentrations of melatonin, melatonin agonists or compounds that stimulate endogenous melatonin production to be greater in the time interval between about 4 hours after DLMO to about 8 hours before DLMO than in the time interval from about 8 hours before DLMO time to about 4 hours after DLMO to achieve a circadian-rhythm phase delay. In addition, the invention provides methods for regulating a human's exposure to light and dark to prevent or enhance, respectively, the human's endogenous production of melatonin. The use of melatonin antagonists, inverse agonists and melatonin inhibitory compounds such as beta-blockers for achieving a circadian-rhythm phase-shifting effect (opposite to that of melatonin administration) are also provided by the invention. The methods of the invention are illustrated by teachings for use of these methods for alleviating a variety of circadian rhythm-related disorders, including jet lag, winter depression, shift work-related desynchronies and sleep phase disorders.